CLAIMS:

1. Decentralized power generation system, said system comprising: - a plurality of decentralized power generating units; - a plurality of DC/DC converters, each of said DC/DC converters being connected to another one of said power generating units for converting a current provided by said power generating units; - a DC bus to which each of said DC/DC converters is coupled for feeding a respectively converted current into said DC bus; and - at least one power receiving component connected to said DC bus for retrieving current from said DC bus, which power receiving component is physically separated from said DC/DC converters.

2. Decentralized power generation system according to claim 1, wherein each of said DC/DC converters is adapted to operate autonomously and to ensure a predetermined voltage on said DC bus.

3. Decentralized power generation system according to claim 1, wherein each of said decentralized power generating units is mechanically coupled to a respective DC/DC converter.

4. Decentralized power generation system according to claim 1, wherein said power receiving component is adapted to survey a voltage on said DC bus and to reduce the power retrieved from said DC bus when the voltage on said DC bus is detected to be decreasing.

5. Decentralized power generation system according to claim 1, further comprising at least one control line connecting each of said DC/DC converters to said at least one power receiving component, which at least one control line is arranged for switching on and off said DC/DC converters.

6. Decentralized power generation system according to claim 5, further comprising at least one plug connection for electrically connecting a respective DC/DC converter in common to said DC bus and, via said control line, to said at least one power receiving component.

7. Decentralized power generation system according to claim 6, wherein said at least one plug connection is adapted to electrically connect a respective DC/DC converter to said DC bus before connecting said DC/DC converter via said control line to said at least one power receiving component and to interrupt the connection between said DC/DC converter via said control line to said at least one power receiving component before disconnecting said DC/DC converter from said DC bus.

8. Decentralized power generation system according to claim 1, wherein said power receiving component is an inverter arranged to convert a direct current retrieved from said DC bus into an alternating current and to feed said alternating current into an alternating current power supply system.

9. Decentralized power generation system according to claim 1, wherein each of said power generating units comprises at least one photovoltaic module.

10. Method of operating a decentralized power generation system, which system comprises a plurality of decentralized power generating units, a plurality of DC/DC converters, a DC bus and at least one power receiving component, which is physically separated from said DC/DC converters, said method comprising:

- generating a current by means of said plurality of power generating units;
- converting the current provided by each of said power generating units by means of a respective DC/DC converter; - feeding said converted currents into said DC bus; and
- providing current from said DC bus to said at least one power receiving component.